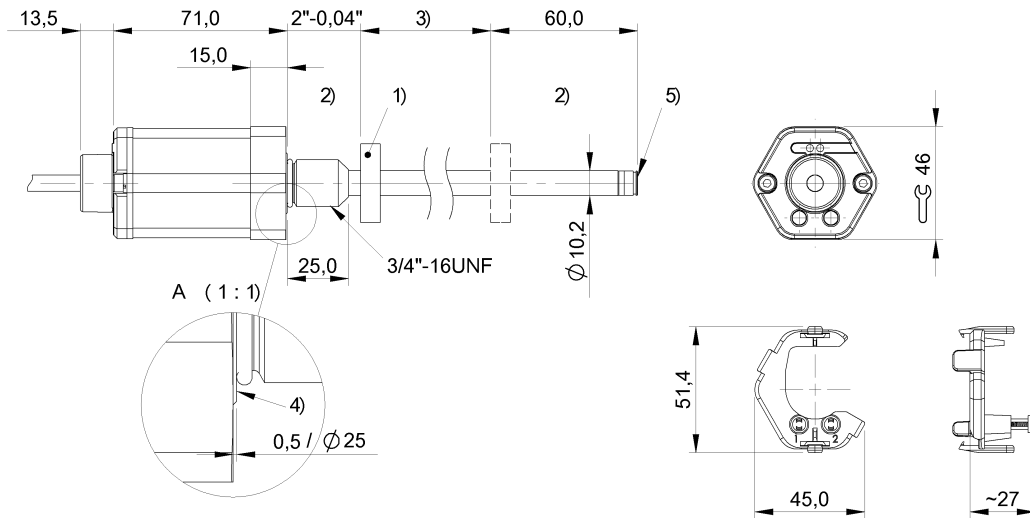


Magnetostrictive Sensors  
**BTL7-E500-M0305-Z-KA01,5**  
**Order Code: BTL19T1**

**BALLUFF**



1) not included in scope of delivery, 2) Non-usable area, 3) Nominal length = Measuring length, 4) Mounting surface, 5) Internal threads M4x4/6 deep



**Basic features**

|  |                             |
|--|-----------------------------|
| <b>Approval/Conformity</b>               | CE<br>UKCA<br>cULus<br>WEEE |
| <b>Magnets, number (factory setting)</b> | 1                           |
| <b>Magnets, number max.</b>              | 1                           |

**Electrical connection**

|  |                              |
|--|------------------------------|
| <b>Bending radius min., fixed cable</b>    | 5 x D                        |
| <b>Bending radius min., flexible cable</b> | 15 x D                       |
| <b>Cable diameter D</b>                    | 6.4...7 mm                   |
| <b>Cable length L</b>                      | 1.5 m, drag chain compatible |
| <b>Connection</b>                          | Cable, 1.50 m, PUR           |
| <b>Connection version</b>                  | axial                        |
| <b>Polarity reversal protected</b>         | Ub up to 36 V                |
| <b>Short-circuit protection</b>            | to GND and to 36 V DC        |

**Electrical data**

|   |  |
|---|--|
| <b>Current consumption max. at 24 V DC</b>  | 150 mA   |
| <b>Error signal Ia rising</b>               | 3.6 mA   |
| <b>Galvanic isolation</b>                   | no   |
| <b>Inrush current</b>                       | ≤ 500 mA/10 ms                                   |
| <b>Operating voltage Ub</b>                 | 10...30 VDC                                      |
| <b>Output signal adjustable</b>             | with calibration aid<br>using programming inputs |
| <b>Overvoltage protection</b>               | Ub up to 36 V                                    |
| <b>Switch-on delay max.</b>                 | 600 ms   |
| <b>Voltage-proof up to (GND to housing)</b> | 500 V AC   |

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**Environmental conditions**

|                                     |   |
|-------------------------------------|---|
| Ambient temperature                 | -40...85 °C                               |
| Cable temperature, fixed routing    | -40...90 °C                               |
| Cable temperature, flexible routing | -5...90 °C                                |
| EN 55016-2-3, Radiation             | For industrial and residential use        |
| EN 60068-2-27, Continuous shock     | 150 g, 2 ms                               |
| EN 60068-2-27, Shock                | 150 g, 6 ms                               |
| EN 60068-2-6, Vibration             | 20 g, 10...2000 Hz                        |
| EN 61000-4-2, ESD                   | Severity Level 3                          |
| EN 61000-4-3, RFI                   | Severity Level 3                          |
| EN 61000-4-4, Burst                 | Severity Level 3                          |
| EN 61000-4-5, Surge                 | Severity Level 2                          |
| EN 61000-4-6, High-frequency fields | Severity Level 3                          |
| EN 61000-4-8 Magnetic fields        | Severity Level 4                          |
| IP rating                           | IP68                                      |
| Relative humidity                   | ≤ 90 %, non-condensing                    |
| Storage temperature                 | -40...100 °C                              |
| Temperature coefficient typ.        | ≤ 30 ppm/K at 50% of nominal stroke 500mm |

**Functional safety**

|              |      |
|--------------|------|
| MTTF (40 °C) | 58 a |
|--------------|------|

**Interface**

|               |                           |
|---------------|---------------------------|
| Analog output | Analog, current 4...20 mA |
|---------------|---------------------------|

**Material**

|                                      |                                    |
|--------------------------------------|------------------------------------|
| Cable flame-resistant                | IEC 60332-1                        |
| Cable jacket, material               | PUR                                |
| Cover material                       | Aluminium, Die-cast, nickel plated |
| Housing material                     | Aluminium, Anodized                |
| Housing material, surface protection | Anodized                           |
| Material flange                      | 1.3960 stainless steel             |
| O-ring material                      | FKM                                |
| Plug material                        | 1.4571 stainless steel             |
| Protection tube material             | 1.4571 stainless steel             |

**Mechanical data**

|  |                           |
|--|---------------------------|
| Installation length from contact surface | 416 mm                    |
| Mounting part                            | Threaded flange 3/4-16UNF |
| Null point                               | 50.8 mm                   |
| Pressure rating max.                     | 600 bar                   |
| Protection tube diameter                 | 10.2 mm                   |
| Tightening torque max.                   | 100 Nm                    |

**Range/Distance**

|                         |         |
|-------------------------|---------|
| Measuring length        | 305 mm  |
| Non-linearity max.      | ±50 µm  |
| Repeat accuracy         | ± 5 µm  |
| Sampling frequency max. | 2000 Hz |

**Wiring Diagrams**

| colour |           |
|--------|-----------|
| YE     | 4...20 mA |
| GY     | 0 V       |
| PK     | NC        |
| RD     | La        |
| GN     | NC        |
| BU     | GND       |
| BN     | +24 V DC  |
| WH     | Lb        |